

CREDIT OPINION

1 October 2018

Update

✓ Rate this Research

Closing date

14 Dec 1995

TABLE OF CONTENTS

Ratings	1
Summary	1
Credit strengths	1
Credit challenges	2
Key characteristics	3
Covered bond description	4
Covered bond analysis	4
Cover pool description	8
Cover pool analysis	11
Methodology and monitoring	12
Moody's related publications	13

Contacts

Patrick Widmayer +49.69.7073.0715
 VP-Senior Analyst
 patrick.widmayer@moody's.com

CLIENT SERVICES

Americas 1-212-553-1653
 Asia Pacific 852-3551-3077
 Japan 81-3-5408-4100
 EMEA 44-20-7772-5454

Landesbank Hessen-Thuringen GZ - Public-Sector Covered Bonds

Update to New Issue Report – Landesbank Hessen-Thuringen GZ - Public-Sector Covered Bonds

Ratings

Exhibit 1

Cover Pool (€)	Ordinary Cover Pool Assets	Covered Bonds (€)	Rating
20,474,335,236	Public Sector Loans	16,350,366,509	Aaa

The ratings address the expected loss posed to investors. Our ratings address only the credit risks associated with the transaction. Other non-credit risks have not been addressed, but may have a significant effect on yield to investors.

Source: Moody's Investors Service

Summary

The covered bonds issued by Landesbank Hessen-Thuringen GZ under the Landesbank Hessen-Thuringen GZ - Public-Sector Covered Bonds programme are full recourse to the issuer and are secured by a cover pool of assets consisting of public-sector loans (99.3%) and substitute collateral (0.7%).

Credit strengths include the full recourse of the covered bonds to the issuer and support provided by the German legal framework for *Pfandbriefe*, which provides for the issuer's regulation and supervision.

Credit challenges include the high level of dependency on the issuer. As with most covered bonds in Europe, there are few restrictions on the future composition of the cover pool. The cover pool also has geographical and obligor concentration risks.

Our credit analysis takes into account the cover pool's credit quality, which is reflected in the collateral score of 3.1%, and the current over-collateralisation (OC) of 25.7% (on an unstressed present value basis) as of 31 March 2018.

Credit strengths

» **Recourse to the issuer:** The covered bonds are full recourse to Landesbank Hessen-Thuringen GZ (Aa3(cr)). (See "Covered bond analysis")

THIS REPORT WAS REPUBLISHED ON 02 OCTOBER 2018 WITH CORRECTIONS TO EXHIBIT 4.

- » **Support provided by the German legal framework:** The covered bonds are governed by the German *Pfandbrief* Act, which provides for the issuer's regulation and supervision and sets certain minimum requirements for the covered bonds and the cover pool. (See "Moody's related publications: Covered Bond Legal Frameworks")
- » **High credit quality of the cover pool:** The covered bonds are supported by a cover pool of high-quality assets. 99.3% of the assets are public-sector loans with the majority in Germany (91.7%). The *Pfandbrief* Act sets out strict eligibility criteria for cover pool assets. Eligible assets for *Öffentliche Pfandbriefe* are (1) claims directly against sovereigns or regional or local governments; and (2) loans to (or other claims against) entities guaranteed by them. The collateral quality is reflected in the collateral score, which is currently 3.1%. (See "Cover pool analysis")
- » **Refinancing risk:** Following what we call a covered bond (CB) anchor event, refinancing risk would be mitigated by a well-established and deep market for German *Pfandbriefe*, as well as the liquidity-matching requirements. A CB anchor event occurs when the issuer, or another entity within the issuer group that supports the issuer, ceases to service the payments on the covered bonds. (See "Covered bond analysis")
- » **Interest rate and currency risks:** Interest rate risk is mitigated by the 2% OC requirement, which has to be maintained in stressed market conditions (that is, yield curve movements and changes in the relevant exchange rates). Currency risk is limited in this programme as most assets (97.6%) and liabilities (97.0%) are denominated in euros. (See "Covered bond analysis")
- » **Provisions for a cover pool administrator:** Following an issuer default, the covered bondholders would benefit from a cover pool administrator (the *Sachwalter*) that acts independently from the issuer's insolvency administrator. Furthermore, if the German banking regulator BaFin deems it necessary, the *Sachwalter* may be appointed ahead of any issuer default. (See "Covered bond analysis")

Credit challenges

- » **High level of dependency on the issuer:** As with most covered bonds, before the insolvency of the issuer, the issuer can materially change the nature of the programme. For example, the issuer can add new assets to the cover pool, issue new covered bonds with varying promises and enter into new hedging arrangements. Also similar to most covered bonds in Europe, this programme has few restrictions on the future composition of the cover pool. These changes could affect the credit quality of the cover pool as well as the overall refinancing and market risks. Further, if the quality of the collateral deteriorates below a certain threshold, the issuer would have the ability, but not the obligation, to increase the OC in the cover pool. (See "Covered bond analysis")
- » **Cover pool concentration:** The cover pool has the following concentrations: (1) geographical concentration, with the majority of loans backed by public entities in Germany (91.7%); and (2) obligor concentration, with the 10 largest obligors accounting for 19.6% of the public-sector loans. (See "Cover pool analysis")
- » **Market risks:** Following a CB anchor event, covered bondholders, to achieve timely principal payment, might need to rely on proceeds raised through the sale of, or borrowing against, the cover pool assets. The market value of these assets may be subject to high volatility after a CB anchor event. In addition, covered bondholders might have exposure to interest rate and currency risks. (See "Covered bond analysis")
- » **Time subordination:** After a CB anchor event, later-maturing covered bonds are subject to time subordination. Principal cash collections may be used on a first-come, first-served basis, paying earlier-maturing covered bonds before later-maturing covered bonds. This subordination could lead to the erosion of OC before any payments are made to later-paying covered bonds. (See "Covered bond analysis")
- » **Lack of liquidity facility:** The programme would not benefit from any designated source of liquidity if cash flow collections are interrupted. (See "Covered bond analysis")

This publication does not announce a credit rating action. For any credit ratings referenced in this publication, please see the ratings tab on the issuer/entity page on www.moody's.com for the most updated credit rating action information and rating history.

Key characteristics

Exhibit 2

Covered bond characteristics

Moody's Programme Number:	213
Issuer:	Landesbank Hessen-Thuringen GZ
Covered Bond Type:	Public-Sector
Issued under Covered Bonds Law:	Yes
Applicable Covered Bonds Law:	Pfandbrief Act
Entity used in Moody's TPI analysis:	Landesbank Hessen-Thuringen GZ
CR Assessment:	Aa3(cr)
CB Anchor:	CR assessment +1 notch
Senior unsecured/deposit rating:	A1
Total Covered Bonds Outstanding:	16,350,366,509
Main Currency of Covered Bonds:	EUR (97%)
Extended Refinance Period:	No
Principal Payment Type:	Hard bullet
Interest Rate Type:	Fixed rate covered bonds (95.5%)
Committed Over-Collateralisation:	2.0%
Current Over-Collateralisation:	25.7% (on an unstressed NPV basis)
Intra-group Swap Provider:	n/a
Monitoring of Cover Pool:	Cover pool monitor (Treuhand), mandatory by operation of the German Pfandbrief Act
Trustees:	n/a
Timely Payment Indicator:	High
TPI Leeway:	5 notches

Source: Moody's Investors Service

Exhibit 3

Cover pool characteristics

Size of Cover Pool:	20,474,335,236
Main Collateral Type in Cover Pool:	Public-Sector (99.3%), Other/Supplementary assets (0.7%)
Main Asset Location of Ordinary Cover Assets:	Germany (91.7%), France (2.9%), Ireland (1.8%), Other (3.7%)
Main Currency:	EUR (97.6%)
Loans Count:	19,885
Number of Borrowers:	5,655
Exposure to the 10 largest borrowers:	19.6%
WA Remaining Term:	74 months
Interest Rate Type:	Fixed rate assets (91.1%), floating rate assets (8.9%)
Collateral Score:	3.1%
Cover Pool Losses:	10.0%
Further Cover Pool Details:	See "Cover pool description"
Pool Cut-off Date:	31 March 2018

Source: Moody's Investors Service

Covered bond description

The covered bonds issued under the public-sector covered bond programme of Landesbank Hessen-Thüringen GZ are full recourse to the issuer. Upon a CB anchor event, covered bondholders would have access to a cover pool of public-sector loan receivables.

Structure description

The bonds

All outstanding covered bonds have a bullet repayment at maturity, without any extension period for the repayment of the bonds.

Issuer recourse

The covered bonds are full recourse to the issuer. Therefore, the issuer is obliged to repay principal and pay interest on the covered bonds.

Recourse to cover pool and over-collateralisation

If the issuer becomes insolvent, the covered bondholders would have priority claims over a pool of assets (cover pool). (See "Cover pool description" for the cover pool characteristics and "Cover pool analysis" for our analysis of the pool)

As of 31 March 2018, the level of OC in the programme was 25.7% on an unstressed present value basis.

The current covered bond rating relies on an OC within the minimum legal requirements by the German *Pfandbrief* Act. The act requires that the OC exceed the principal balance of the bonds by 2%. Based on data as of 31 March 2018, 0.0% of OC is sufficient to maintain the current covered bond rating, which is lower than committed OC.

Although the issuer has the ability to increase the OC in the cover pool if collateral quality deteriorates below a certain threshold, the issuer does not have any obligation to do so. The failure to increase OC following a deterioration of the collateral could lead to a negative rating action.

Legal framework

The covered bonds are governed by the *Pfandbrief* Act. There are a number of strengths in this legislation, including the regulation of the issuer by BaFin, as well as certain minimum requirements for the covered bonds and the cover pool. No specific structural features beyond the statutory requirements are implemented for this public-sector covered bond programme. (See [Covered Bonds: Germany - Legal Framework for Covered Bonds](#), August 2015, for a description of the general legal framework for *Öffentliche Pfandbriefe* governed by the *Pfandbrief* Act.)

Covered bond analysis

Our credit analysis of the covered bonds primarily focuses on the issuer's credit quality, refinancing risk, interest rate risk and currency risk, as well as the probability that payments on the covered bonds would be made in a timely fashion following a CB anchor event, which we measure using the Timely Payment Indicator (See "Timely Payment Indicator").

Primary analysis

Issuer analysis - Credit quality of the issuer

The issuer's CR Assessment is Aa3(cr). (For a description of the issuer's rating drivers, see [Credit Opinion](#), published September 2018)

The reference point for the issuer's credit strength in our analysis is the CB anchor, which for covered bond programmes under the covered bond law in Germany is the CR Assessment plus one notch.

Issuer analysis - Dependency on the issuer's credit quality

The credit quality of the covered bonds depends primarily on the credit quality of the issuer. If the issuer's credit strength were to deteriorate, there would be a greater risk that a CB anchor event would occur, leading to refinancing risk for the covered bonds. Consequently, the credit quality of the covered bonds would deteriorate unless other credit risks were to decrease.

In the event that the CB anchor deteriorates, the issuer would have the ability, but not the obligation, to increase the OC in the cover pool. Failure to increase the level of OC under these circumstances could lead to a negative rating action.

Reasons for the high level of dependency of the covered bonds with the issuer also include exposure to decisions made by the issuer in its discretion as manager of the covered bond programme. For example, before a CB anchor event, the issuer may add new assets to

the cover pool and remove assets from the cover pool, issue further bonds and enter new hedging arrangements. Such actions could reduce the value of the cover pool.

As with most covered bonds in Europe, there are few contractual restrictions on the future composition of the cover pool, which creates substitution risk. Nevertheless, cover pool quality over time will be protected by, among other things, the requirements of the German *Pfandbrief* Act, which specifies what types of assets are eligible. (See "Moody's related publications: Covered Bond Legal Frameworks")

Refinancing risk

Following a CB anchor event, the "natural" amortisation of the cover pool assets alone cannot be relied on to repay the principal. We assume that funds must be raised against the cover pool at a discount if covered bondholders are to receive timely principal payment. Where the portion of the cover pool that is potentially exposed to refinancing risk is not contractually limited, our expected loss analysis typically assumes that this amount is in excess of 50% of the cover pool.

After a CB anchor event, the market value of these assets may be subject to volatility. Examples of the stressed refinancing margins we use for different types of prime-quality assets are published in our Rating Methodology. (See "Moody's related publications - Moody's Approach to Rating Covered Bonds")

The refinancing-positive factors outweigh the negative ones. The refinancing-positive aspects of this covered bond programme include:

- » The *Pfandbrief* Act: At the time of the declaration of the issuer's bankruptcy, or earlier if BaFin considers it necessary, a cover pool administrator (the *Sachwalter*) would take over management responsibility of the covered bond programme. The *Sachwalter* would have the ability to sell all or part of the cover pool, with or without all or parts of the liabilities attached.
- » The depth of the German market and the high level of government and financial market support expected to be available to *Pfandbriefe* in Germany, where refinancing risk is perceived as lower than in most other jurisdictions. In the modeling of this transaction, we have used refinancing margins that are lower than the refinancing margins used for most other jurisdictions.
- » The issuer is required to cover potential liquidity gaps over the next 180 days between payments expected to be received under the cover pool assets and payments due under the outstanding covered bonds.

The refinancing-negative aspects of this covered bond programme include the fact that the programme does not benefit from any contractual provisions to allow for an extension of a principal refinancing period; all covered bonds issued under this programme will have a hard bullet repayment with no extension period, which is typical of German *Pfandbrief* programmes.

Interest rate and currency risk

As with the majority of European covered bonds, there is potential for interest rate and currency risks, which could arise from the different payment promises and durations made on the cover pool and the covered bonds.

Exhibit 4

Overview of assets and liabilities

	WAL Assets (Years)	WAL Liabilities (Years)	Assets (%)	Liabilities (%)
Fixed rate	6.3	5.4	91.1%	95.5%
Variable rate	4.4	4.0	8.9%	4.5%

WAL = weighted average life

Source: Moody's Investors Service, issuer data

In the event of issuer insolvency, we currently do not assume that the *Sachwalter* would always be able to efficiently manage any natural hedge between the cover pool and the covered bonds. Therefore, following a CB anchor event, our model would separately assess the impact of increasing and decreasing interest rates on the expected loss of the covered bonds, taking the path of interest rates that leads to the worst result. The interest rate and currency stresses used over different time horizons are published in our Rating Methodology.

Aspects of this covered bond programme that are market-risk positive include:

- » Low currency risk. Currently, only a minority of foreign exchange-denominated assets (2.4%) and covered bonds (3.0%) outstanding.
- » The majority of the assets (91.1%) pay a fixed rate and 100% of the outstanding bonds pay a fixed rate. This limits the potential interest-rate mismatches in case of rate movements.
- » The requirement under the *Pfandbrief* Act that the stressed present value OC of the cover pool must exceed, by at least 2%, the total of outstanding covered bonds issued against the cover pool, and the requirement that *Pfandbrief* issuers must regularly run stress tests regarding interest rate and foreign-exchange risks.

Aspects of this covered bond programme that are market-risk negative include:

- » A potential sale of fixed-rate assets to meet payments due on covered bonds following a CB anchor event could lead to a crystallisation of mark-to-market losses caused by interest rate movements upon issuer default.

Timely Payment Indicator

Our Timely Payment Indicator (TPI) assesses the likelihood that timely payments would be made to covered bondholders following a CB anchor event, and thus determines the maximum rating a covered bond programme can achieve with its current structure while allowing for the addition of a reasonable level of OC. We have assigned a TPI of High to these covered bonds, in line with other public-sector covered bonds issued under the *Pfandbrief* Act.

Based on the current TPI of High, the TPI leeway for this programme is five notches. This five-notch leeway implies that we might downgrade the covered bonds' rating because of a TPI cap if we were to lower the CB anchor by more than five notches, all other variables being equal.

The TPI-positive aspects of this covered bond programme include:

- » The high level of government and financial market support provided to *Pfandbriefe* in Germany
- » The refinancing-positive factors discussed in the "Refinancing risk" section
- » The strength of the German *Pfandbrief* legislation, including:
 - The *Sachwalter* would take over management responsibility of the covered bond programme at the time of the declaration of the issuer's bankruptcy, or earlier if BaFin were to consider it necessary.
 - The *Sachwalter* would act independently from the issuer's insolvency administrator. Having an independent cover pool administrator might reduce potential conflicts of interest between the covered bondholders and other creditors.
 - The issuer is required to cover potential liquidity gaps over the next 180 days between payments expected to be received under the cover pool assets and payments due under the outstanding covered bonds.
 - Set-off: We understand that the *Pfandbrief* Act excludes from set-off loans registered in the cover pool that are under German law and located in Germany.
- » The credit quality of the cover pool assets, reflected by the collateral score of 3.1%.

The TPI-negative aspects of this covered bond programme include:

- » All covered bonds outstanding have a bullet repayment at maturity, without any extension period for the repayment of the bonds.
- » The covered bond programme does not benefit from any designated source of liquidity if cash flow collections are interrupted.
- » Commingling risk: Upon the appointment of the *Sachwalter*, it is our understanding that the *Sachwalter* has a priority claim on all cash flows stemming from the cover pool assets. However, these cash flows have to be separated from other cash flows to the issuer before they can be used to make payments to covered bondholders.

Additional analysis

Liquidity

The covered bond programme would not benefit from any designated source of liquidity if cash flow collections were to be interrupted. However, before an issuer default, the *Pfandbrief* Act requires the issuer to cover potential liquidity gaps for the next 180 days and to maintain a minimum OC level of 2% on a present value basis. After an issuer default, the *Sachwalter* would have the ability to sell all or a portion of the cover pool to make timely payments on the bonds.

Time subordination

After a CB anchor event, later-maturing covered bonds would be subject to time subordination. Principal cash collections may be used on a first-come, first-served basis, paying earlier-maturing covered bonds before later-maturing covered bonds. Such payments could result in the erosion of OC before any payments are made to later-paying covered bonds.

Cover pool description

Pool description as of 31 March 2018

As of 31 March 2018, the cover pool consisted of public-sector loans (99.3%) and cover assets that constitute substitute assets under the *Pfandbrief Act* (0.7%).

On a nominal value basis, the cover pool assets total €20.5 billion, which back €16.4 billion in covered bonds, resulting in an OC level of 25.7% on an unstressed present value basis.

As Exhibit 5 shows, the public-sector loans amount to €20.3 billion. Of this amount, 91.7% are backed by German cover assets. The 10 largest obligors account for 19.6% of the commercial loans. All assets are performing.

The majority of public-sector loans are direct claims against municipalities (69.7%). With regards to German assets there is some geographical concentration in Hesse (45.2%) and North Rhine-Westphalia (30.8%). The credit quality of the obligors in general, including the largest obligors in the cover pool, is high.

Public-sector loans

Exhibit 5

Cover pool summary

Overview

Asset type:	Public-Sector
Asset balance:	20,330,840,828
WA remaining Term (in months):	74
Number of borrowers:	5,655
Number of loans / bonds:	19,885
Exposure to the 10 largest borrowers:	19.6%
Average exposure to borrowers:	3,595,197
Main countries:	Germany (91.7%)
	France (2.9%)
	Ireland (1.8%)

Source: Moody's Investors Service, issuer data

Specific Loan and Borrower characteristics

Repo eligible loans / bonds:	2.5%
Percentage of fixed rate loans / bonds:	91.1%
Percentage of bullet loans/ bonds:	25.1%
Loans / bonds in non-domestic currency:	2.4%

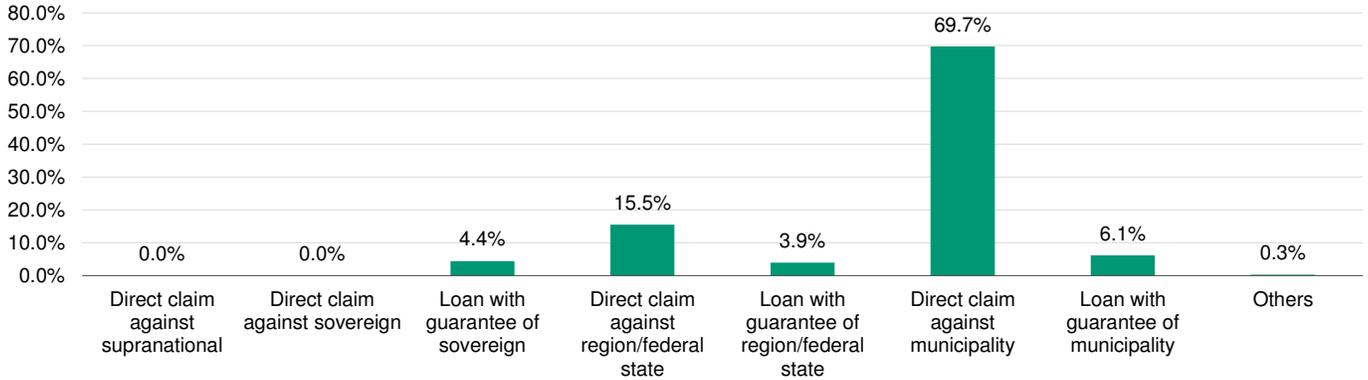
Performance

Loans / bonds in arrears (≥ 2months - < 6months):	0.0%
Loans / bonds in arrears (≥ 6months - < 12months):	0.0%
Loans / bonds in arrears (≥ 12months):	0.0%
Loans / bonds in a foreclosure procedure:	0.0%

Exhibit 6
Cover pool characteristics

Exhibit A

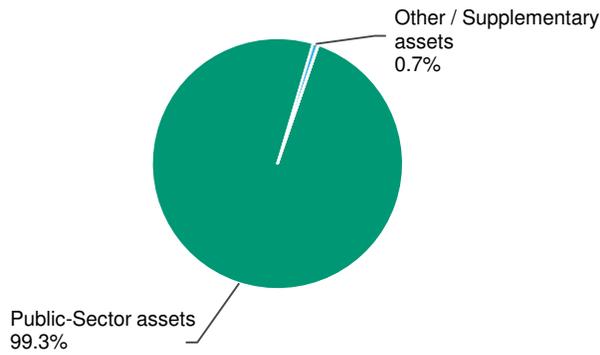
Borrower Type



Source: Moody's Investors Service, issuer data

Exhibit B

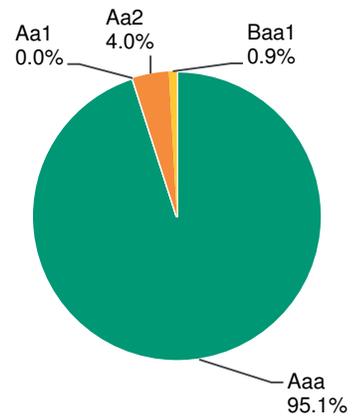
Percentage of Public-Sector Assets



Source: Moody's Investors Service, issuer data

Exhibit C

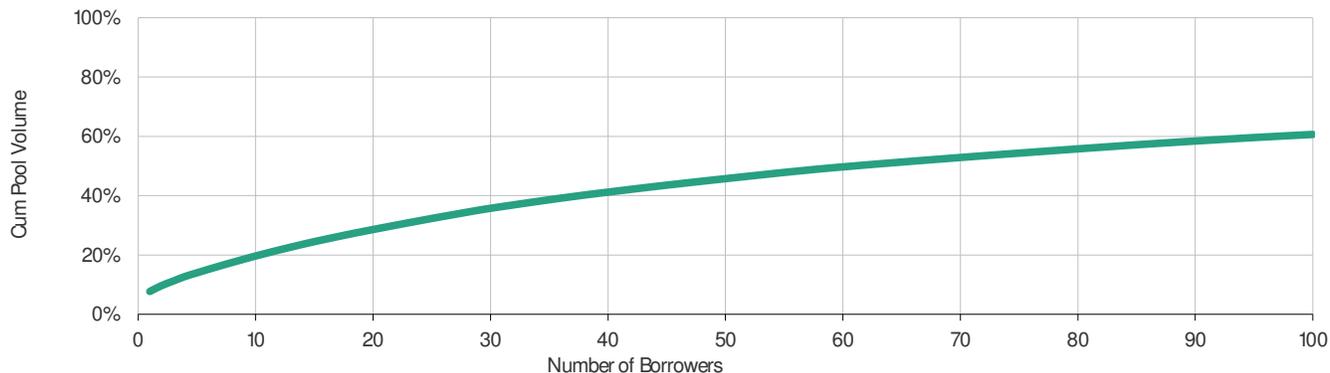
Pool Distribution by Country Exposure



Source: Moody's Investors Service, issuer data

Exhibit D

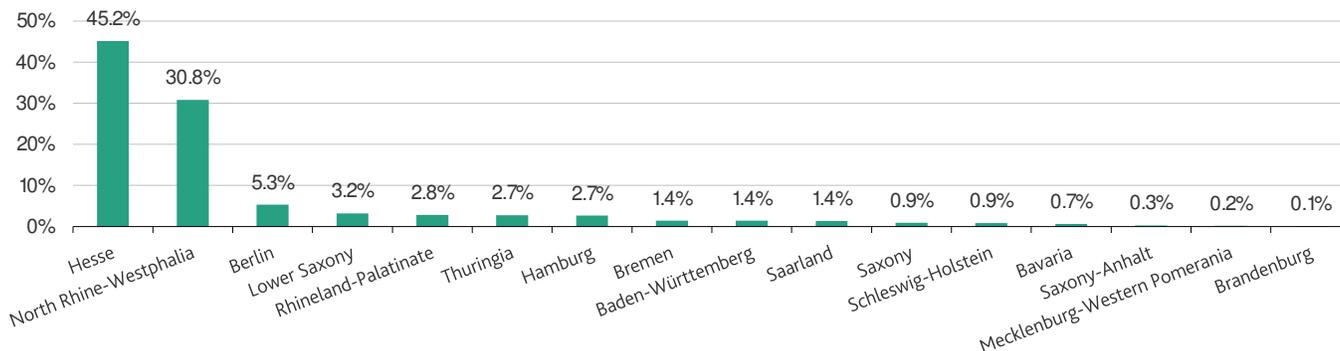
Borrower Concentration



Source: Moody's Investors Service, issuer data

Exhibit E

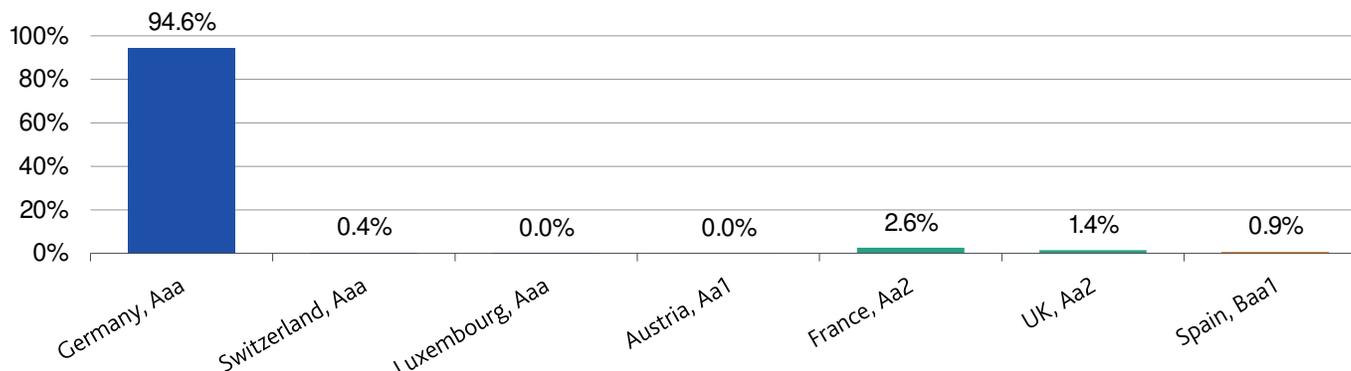
Regional distribution of main country



Source: Moody's Investors Service, issuer data

Exhibit F

Distribution by Country Rating



Source: Moody's Investors Service, issuer data

Substitute assets

Of the cover assets, €0.14 billion (0.7%) are substitute assets. The substitute assets currently consist of European public sector and financial institutions' debt. The substitute assets do not include any debt held by entities in the Landesbank Hessen-Thuringen group.

Cover pool monitor

Pursuant to the *Pfandbrief* Act, the regulator (BaFin) has appointed a cover pool monitor (*Treuhänder*). (See "Moody's related publications: Covered Bond Legal Frameworks")

Cover pool analysis

Our credit analysis of the pool takes into account specific characteristics of the pool.

Primary cover pool analysis

We calculate the collateral score for the cover pool using a Monte Carlo simulation approach to assess the credit risk for the public-sector assets in the cover pool. Our analysis takes into account, among other factors, the impact of concentration on borrower, regional and country levels as well as individual borrower's credit quality.

For this programme, the collateral score of the current pool is 3.1%, which is lower than the average collateral score of other German public-sector covered bonds. (For details, see "Moody's related publications: [Moody's Global Covered Bonds Monitoring Overview: Q4 2017](#)") The following factors support the credit quality of the pool: (1) 100% of the assets are performing, and (2) the credit quality of the individual obligors is high.

Factors considered as negative include the degree of regional concentration in Germany.

Comparables

Exhibit 7

PROGRAMME NAME	Landesbank Hessen-Thüringen GZ - Public-Sector Covered Bonds	Landesbank Baden-Wuerttemberg - Public-Sector Covered Bonds	Bayerische Landesbank - Public-Sector Covered Bonds	Landesbank Berlin AG - Public-Sector Covered Bonds
Overview				
Programme is under the law	Yes	Yes	Yes	Yes
Main country in which collateral is based	Germany	Germany	Germany	Germany
Country in which issuer is based	Germany	Germany	Germany	Germany
Total outstanding liabilities	16,350,366,509	8,546,042,830	18,181,390,557	526,500,000
Total assets in the Cover Pool	20,474,335,236	12,703,002,032	23,131,034,436	951,933,935
Issuer name	Landesbank Hessen-Thüringen GZ	Landesbank Baden-Wuerttemberg	Bayerische Landesbank	Landesbank Berlin AG
Issuer CR assessment	Aa3(cr)	Aa3(cr)	Aa3(cr)	Aa2(cr)
Group or parent name	n/a	n/a	n/a	n/a
Group or parent CR assessment	n/a	n/a	n/a	n/a
Main collateral type	Public Sector	Public Sector	Public Sector	Public Sector
Collateral types	Public-Sector 99.3%, Other/Supplementary assets 0.7%	Public-Sector 100%	Public-Sector 98.2%, Other/Supplementary assets 1.2%	Public-Sector 100%
Ratings				
Covered bonds rating	Aaa	Aaa	Aaa	Aaa
Entity used in Moody's EL & TPI analysis	Landesbank Hessen-Thüringen GZ	Landesbank Baden-Wuerttemberg	Bayerische Landesbank	Landesbank Berlin AG
CB anchor	CR Assessment + 1 notch	CR Assessment + 1 notch	CR Assessment + 1 notch	CR Assessment + 1 notch
CR Assessment	Aa3(cr)	Aa3(cr)	Aa3(cr)	Aa2(cr)
SUR/ LT Deposit	A1	A1	Aa3	A1
Unsecured claim used for Moody's EL analysis	Yes	Yes	Yes	Yes
Value of Cover Pool				
Collateral Score	3.1%	4.9%	6.3%	14.1%
Collateral Score excl. systemic risk	n/a	n/a	n/a	n/a
Collateral Risk (Collateral Score post-haircut)	1.7%	2.7%	3.4%	7.7%
Market Risk	8.2%	8.4%	8.1%	8.3%
Over-Collateralisation Levels				
Committed OC*	2.0%	2.0%	2.0%	2.0%
Current OC	25.7%	54.4%	31.3%	80.8%
OC consistent with current rating	0.0%	0.0%	0.0%	0.0%
Surplus OC	25.7%	54.4%	31.3%	80.8%
Timely Payment Indicator & TPI Leeway				
TPI	High	High	High	High
TPI Leeway	5	5	5	5
Reporting date	31 March 2018	31 March 2018	31 March 2018	31 December 2017

* We consider this level of OC as committed according to our methodology even though the level of OC provided via the asset cover test might be higher because the issuer could reduce the level of OC down to this level without a rating impact on our covered bond rating.

Source: Moody's Investors Service, issuer data

Methodology and monitoring

The primary methodology we use in rating the issuer's covered bonds is "Moody's Approach to Rating Covered Bonds", published in December 2016. Other methodologies and factors that may have been considered in the rating process can also be found on <http://www.moodys.com>. In addition, we publish a weekly summary of structured finance credit, ratings and methodologies, available to all registered users of our website, at www.moodys.com/SFQuickCheck.

We expect the issuer to deliver certain performance data to us on an ongoing basis. In the event that this data is not made available to us, our ability to monitor the ratings may be impaired. This lack of data availability could negatively affect the ratings or, in some cases, our ability to continue to rate the covered bonds.

Moody's related publications

Rating Methodology

- » [Moody's Approach to Rating Covered Bonds, December 2016 \(1044142\)](#)

Special Comments

- » [EU Bank Recovery and Resolution Regime Strengthens German Covered Bonds and Improves Their Ratings, July 2015 \(1006468\)](#)
- » [Moody's Global Covered Bonds Monitoring Overview: Q4 2017, June 2018 \(1127159\)](#)
- » [Structural Protection Mechanisms for Non-EEA Assets in German Cover Pools, July 2014 \(SF374519\)](#)

Performance Overview

- » [Landesbank Hessen-Thuringen GZ - Public-Sector Covered Bonds, May 2018 \(SF471810\)](#)

Credit Opinion

- » [Landesbank Hessen-Thuringen GZ](#)

Webpages

- » Covered Bonds: www.moody.com/coveredbonds
- » Covered Bond Legal Frameworks: www.moody.com/Pages/CoveredBondLegalFrameworks.aspx

To access any of these reports or webpages, click on the entry above. Note that these references are current as of the date of publication of this report and that more recent reports may be available. All research may not be available to all clients.

© 2018 Moody's Corporation, Moody's Investors Service, Inc., Moody's Analytics, Inc. and/or their licensors and affiliates (collectively, "MOODY'S"). All rights reserved.

CREDIT RATINGS ISSUED BY MOODY'S INVESTORS SERVICE, INC. AND ITS RATINGS AFFILIATES ("MIS") ARE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES, AND MOODY'S PUBLICATIONS MAY INCLUDE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES. MOODY'S DEFINES CREDIT RISK AS THE RISK THAT AN ENTITY MAY NOT MEET ITS CONTRACTUAL, FINANCIAL OBLIGATIONS AS THEY COME DUE AND ANY ESTIMATED FINANCIAL LOSS IN THE EVENT OF DEFAULT. CREDIT RATINGS DO NOT ADDRESS ANY OTHER RISK, INCLUDING BUT NOT LIMITED TO: LIQUIDITY RISK, MARKET VALUE RISK, OR PRICE VOLATILITY. CREDIT RATINGS AND MOODY'S OPINIONS INCLUDED IN MOODY'S PUBLICATIONS ARE NOT STATEMENTS OF CURRENT OR HISTORICAL FACT. MOODY'S PUBLICATIONS MAY ALSO INCLUDE QUANTITATIVE MODEL-BASED ESTIMATES OF CREDIT RISK AND RELATED OPINIONS OR COMMENTARY PUBLISHED BY MOODY'S ANALYTICS, INC. CREDIT RATINGS AND MOODY'S PUBLICATIONS DO NOT CONSTITUTE OR PROVIDE INVESTMENT OR FINANCIAL ADVICE, AND CREDIT RATINGS AND MOODY'S PUBLICATIONS ARE NOT AND DO NOT PROVIDE RECOMMENDATIONS TO PURCHASE, SELL, OR HOLD PARTICULAR SECURITIES. NEITHER CREDIT RATINGS NOR MOODY'S PUBLICATIONS COMMENT ON THE SUITABILITY OF AN INVESTMENT FOR ANY PARTICULAR INVESTOR. MOODY'S ISSUES ITS CREDIT RATINGS AND PUBLISHES MOODY'S PUBLICATIONS WITH THE EXPECTATION AND UNDERSTANDING THAT EACH INVESTOR WILL, WITH DUE CARE, MAKE ITS OWN STUDY AND EVALUATION OF EACH SECURITY THAT IS UNDER CONSIDERATION FOR PURCHASE, HOLDING, OR SALE.

MOODY'S CREDIT RATINGS AND MOODY'S PUBLICATIONS ARE NOT INTENDED FOR USE BY RETAIL INVESTORS AND IT WOULD BE RECKLESS AND INAPPROPRIATE FOR RETAIL INVESTORS TO USE MOODY'S CREDIT RATINGS OR MOODY'S PUBLICATIONS WHEN MAKING AN INVESTMENT DECISION. IF IN DOUBT YOU SHOULD CONTACT YOUR FINANCIAL OR OTHER PROFESSIONAL ADVISER. ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY LAW, INCLUDING BUT NOT LIMITED TO, COPYRIGHT LAW, AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT.

CREDIT RATINGS AND MOODY'S PUBLICATIONS ARE NOT INTENDED FOR USE BY ANY PERSON AS A BENCHMARK AS THAT TERM IS DEFINED FOR REGULATORY PURPOSES AND MUST NOT BE USED IN ANY WAY THAT COULD RESULT IN THEM BEING CONSIDERED A BENCHMARK.

All information contained herein is obtained by MOODY'S from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, all information contained herein is provided "AS IS" without warranty of any kind. MOODY'S adopts all necessary measures so that the information it uses in assigning a credit rating is of sufficient quality and from sources MOODY'S considers to be reliable including, when appropriate, independent third-party sources. However, MOODY'S is not an auditor and cannot in every instance independently verify or validate information received in the rating process or in preparing the Moody's publications.

To the extent permitted by law, MOODY'S and its directors, officers, employees, agents, representatives, licensors and suppliers disclaim liability to any person or entity for any indirect, special, consequential, or incidental losses or damages whatsoever arising from or in connection with the information contained herein or the use of or inability to use any such information, even if MOODY'S or any of its directors, officers, employees, agents, representatives, licensors or suppliers is advised in advance of the possibility of such losses or damages, including but not limited to: (a) any loss of present or prospective profits or (b) any loss or damage arising where the relevant financial instrument is not the subject of a particular credit rating assigned by MOODY'S.

To the extent permitted by law, MOODY'S and its directors, officers, employees, agents, representatives, licensors and suppliers disclaim liability for any direct or compensatory losses or damages caused to any person or entity, including but not limited to by any negligence (but excluding fraud, willful misconduct or any other type of liability that, for the avoidance of doubt, by law cannot be excluded) on the part of, or any contingency within or beyond the control of, MOODY'S or any of its directors, officers, employees, agents, representatives, licensors or suppliers, arising from or in connection with the information contained herein or the use of or inability to use any such information.

NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY SUCH RATING OR OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.

Moody's Investors Service, Inc., a wholly-owned credit rating agency subsidiary of Moody's Corporation ("MCO"), hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by Moody's Investors Service, Inc. have, prior to assignment of any rating, agreed to pay to Moody's Investors Service, Inc. for appraisal and rating services rendered by it fees ranging from \$1,500 to approximately \$2,500,000. MCO and MIS also maintain policies and procedures to address the independence of MIS's ratings and rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold ratings from MIS and have also publicly reported to the SEC an ownership interest in MCO of more than 5%, is posted annually at www.moody's.com under the heading "Investor Relations — Corporate Governance — Director and Shareholder Affiliation Policy."

Additional terms for Australia only: Any publication into Australia of this document is pursuant to the Australian Financial Services License of MOODY'S affiliate, Moody's Investors Service Pty Limited ABN 61 003 399 657 AFSL 336969 and/or Moody's Analytics Australia Pty Ltd ABN 94 105 136 972 AFSL 383569 (as applicable). This document is intended to be provided only to "wholesale clients" within the meaning of section 761G of the Corporations Act 2001. By continuing to access this document from within Australia, you represent to MOODY'S that you are, or are accessing the document as a representative of, a "wholesale client" and that neither you nor the entity you represent will directly or indirectly disseminate this document or its contents to "retail clients" within the meaning of section 761G of the Corporations Act 2001. MOODY'S credit rating is an opinion as to the creditworthiness of a debt obligation of the issuer, not on the equity securities of the issuer or any form of security that is available to retail investors. It would be reckless and inappropriate for retail investors to use MOODY'S credit ratings or publications when making an investment decision. If in doubt you should contact your financial or other professional adviser.

Additional terms for Japan only: Moody's Japan K.K. ("MJJK") is a wholly-owned credit rating agency subsidiary of Moody's Group Japan G.K., which is wholly-owned by Moody's Overseas Holdings Inc., a wholly-owned subsidiary of MCO. Moody's SF Japan K.K. ("MSFJ") is a wholly-owned credit rating agency subsidiary of MJJK. MSFJ is not a Nationally Recognized Statistical Rating Organization ("NRSRO"). Therefore, credit ratings assigned by MSFJ are Non-NRSRO Credit Ratings. Non-NRSRO Credit Ratings are assigned by an entity that is not a NRSRO and, consequently, the rated obligation will not qualify for certain types of treatment under U.S. laws. MJJK and MSFJ are credit rating agencies registered with the Japan Financial Services Agency and their registration numbers are FSA Commissioner (Ratings) No. 2 and 3 respectively.

MJJK or MSFJ (as applicable) hereby disclose that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by MJJK or MSFJ (as applicable) have, prior to assignment of any rating, agreed to pay to MJJK or MSFJ (as applicable) for appraisal and rating services rendered by it fees ranging from JPY200,000 to approximately JPY350,000,000.

MJJK and MSFJ also maintain policies and procedures to address Japanese regulatory requirements.

Contacts

Juan Pablo Soriano +34.91.768.8233
MD-Structured Finance
juanpablo.soriano@moodys.com

Jose de Leon +34.91.768.8218
Senior Vice President/
Manager
jose.deleon@moodys.com

Nicholas Lindstrom +44.20.7772.5332
Associate Managing
Director
nicholas.lindstrom@moodys.com

CLIENT SERVICES

Americas	1-212-553-1653
Asia Pacific	852-3551-3077
Japan	81-3-5408-4100
EMEA	44-20-7772-5454